RFCA Stakeholder Focus Group
Meeting Agenda

When: **March 20, 2002 3:30 – 6:30 p.m.**

Where: **Broomfield Municipal Hall, Bal Swan and Zang's Spur Rooms**

3:30-3:40	Ground Rules, Agenda Review, Objectives for this Meeting
3:40-4:10	Wind Tunnel Studies Peer Reviews Group Discussion and Response to Agencies / DOE
4:10-5:00	Agency Response to RSALs Task 3 Peer Reviews – Presentation and Group Discussion
5:00-5:10	Break
5:00–5:40	Agency Response to RSALs Task 3 Peer Reviews – Presentation and Group Discussion (Cont.)
5:40–6:20	Uranium Surface RSAL Calculation and Draft Modeling Results – Presentation and Group Discussion
6:20-6:30	Set Next Agenda
6:30	Adjourn

March 15, 2002

Dear Stakeholder:

The Rocky Flats Cleanup Agreement (RFCA) Stakeholder Focus Group will meet at the Broomfield Municipal Center at One DesCombes Drive on March 20, 2002 from 3:30 to 6:30 p.m.

The agenda for the March 20 meeting is enclosed (Attachment A). We will discuss the following topics:

- Agency Responses to Wind Tunnel Studies Peer Reviews
- Agency Responses to RSALs Task 3 Report Peer Reviews
- Uranium Surface RSAL Calculation and Draft Modeling Results

The handouts from the February 20, 2002 RFCA Focus Group meeting are enclosed as Attachment B, and include:

- RSALs Working Group Responses to Wind Tunnel Peer Review Comments, and
- Shaking the Foundations? The DOE Low-Dose Study Program (available in paper copy only).

Bob Nininger presented the "Response to Peer Review Comments Wind Tunnel Analysis." His presentation is Attachment C.

Attachment D is the RSALs Working Group Meeting Notes for the February 28 and March 2, 2002 meetings.

Attachment E is the agency responses to the RSALs Task 3 Report Peer Reviews.

You may call either Christine or me if you have any questions, comments, or suggestions concerning the RFCA Stakeholder Focus Group or the upcoming meeting.

Sincerely,

C. Reed Hodgin, CCM
Facilitator / Process Manager

RFCA Stakeholder Focus Group
Meeting Minutes
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INTRODUCTION AND ADMINISTRATIVE

A participants list for the March 20, 2002 Rocky Flats Cleanup Agreement (RFCA) Stakeholder Focus Group meeting is included in this report as Appendix A.

Reed Hodgin of AlphaTRAC, Inc., meeting facilitator, reviewed the purpose of the RFCA Focus Group and the meeting rules. Introductions were made.

AGENDA

Reed reviewed the agenda:

- Agency Responses to Wind Tunnel Studies Peer Reviews;
- Agency Responses to RSALs Task 3 Report Peer Reviews;
- Uranium Surface RSAL Calculation and Draft Modeling Results.

URANIUM SURFACE RSAL CALCULATION AND DRAFT MODELING RESULTS

The U.S. Environmental Protection Agency (EPA) informed the Focus Group that the Uranium surface Radiological Soil Action Level (RSAL) had been recalculated based on comments received by the agency. These recalculations will be documented and presented to the Focus Group at the next meeting.

AGENCY REPONSES TO RSALS TASK 3 REPORT PEER REVIEWS

The EPA presented *Agency Response Presentation to RSALs Task 3 Report Peer Reviews.* According to EPA, comments from the peer review process centered on the following topics:

- Cancer slope factors;
- Addition of point estimates;
- Probabilistic assessments;
- Adult soil intake rates;
- Childhood soil intake rates;

- Spreadsheet analysis;
- Backward calculation method; and
- Uncertainty and variability analysis.

Cancer Slope Factors

Comment: Cancer slope factors are for mixed age populations and should not be used for adult only scenarios.

Agency response: For this process, the mixed-aged population parameter was the averaged age of the child and adult age. EPA Headquarters provided EPA Region 8 with adult-specific cancer slope factors.

EPA will rerun the adult calculations for scenarios (i.e., wildlife refuge worker and office worker) using adult-specific cancer slope factors.

The Focus Group requested a report back on the new adult calculations and the impact the calculations had on the RSAL. EPA stated that the rural resident scenario and open space scenario children were still being run and that the cancer slope factors for the these scenarios would not change.

Addition of Point Estimates

Comment: Point estimates should be provided to allow a perspective on probabilistic estimates.

Agency response: Point estimates should be provided for residential and wildlife refuge workers (the open space and office worker scenarios are already point estimates).

Probabilistic Assessments

Comment: Probabilistic assessment should also be done for the open space and office worker scenarios.

Agency response: Development of probabilistic inputs is time- and resource-intensive. An RSAL Working Group decision was made to focus on the scenarios, pathways, and parameters which would most impact the risk and decision making process.

Adult Soil Intake Rates

Comment: The adult soil intake rate does not seem reasonable because it is a single value and it is high. The use of point estimates for variables with sparse data, instead of assigning distribution deliberately, interjects bias.

Agency response: The report will be revised to use a distribution for the adult soil intake rate. A point estimate calculation, using the 100 milligrams per day (mg/day) EPA default value for agricultural workers, will be provided for comparison.

Childhood Soil Intake Rates

Comment: The values chosen for children seem to be reasonable. The reviewer is skeptical how long the maximum value (1000mg/day) can actually be sustained by a child. A value that high seems questionable.

Comment: The RSAL calculation does not take into account extreme soil ingestion behavior that has been observed in a small percentage of children.

Agency Response: The intent of the RSALs is to provide a level in soil that is protective of continuous, long-term exposures. The data suggest that day-to-day variability occurs with children, resulting in occasional days of high soil intake; however, the annual or long-term average is much lower. The Calabrese and Stanek (1997; 2000); Stanek et al. (2001); and the Anaconda, Montana studies determined to be the most representative of the Denver Front Range population. The decision to increase the maximum value was an RSALs Working Group decision based on other suitable studies. The hot spot methodology in sampling and analysis plans would address risk from acute or short-term exposures.

Spreadsheet Analysis

Comment: Robert Underwood, reviewer, provided a number of suggestions on improving and correcting spreadsheets used in calculating RSALs.

One example provided by the reviewer is implementing security features in the spreadsheets so that it would be difficult to make errors.

Agency response: The comments were very good and the agencies will revise spreadsheets to address R. Underwood's comments where they pertain.

Backward Calculation Method

Comment: The backward calculating method is inappropriate for deriving RSALs.

Agency response: There are limitations to this method. It should not be used when the variable that is back calculated (i.e., the risk term) is represented by a distribution; however, if you set a single target risk level (i.e., risk = 10^{-6}), and then algebraically reverse the risk equation, you produce a distribution of RSALs that represents the same source of variability as a forward calculation of risk. Each percentile of the RSAL distribution (e.g., the "x" percentile) corresponds to the 1-x percentile for the distribution of risk estimates.

Uncertainty and Variability Analysis

In response to many questions and comments, *Section VI Uncertainty and Variability Analysis* will be revised to the extent possible to:

- Better separate uncertainty from variability;
- Make clear that the input distributions (PDFs) to the RSAL calculations represent variability in the available data, not uncertainty;
- Clarify the text or those table entries that confused people, such as the area correction factors in the RESRAD model and risk equations;
- Correct errors;
- Include any additional sources of uncertainty in the tables;
- Expand discussions, where needed, to increase the clarity of the document, such as adding the exposure unit calculations for the wildlife refuge worker;
- Clearly describe the cumulative impact for each receptor of the choices made for all parameters and assumptions.

In response to disagreements between the Working Group and the reviewers, below are areas where plans exist to retain the original approach or apply an alternative:

- Qualitative assessment of the impacts of all sources of uncertainty on the final RSAL calculation:
  - Confidence in data supporting "driver" parameters will be ranked as high, medium, or low.
  - More consistent qualitative method for evaluating impact of all assumptions on the final RSALs.
  - Goal of uncertainty assessment: Does the 95th percentile of the probabilistic risk distribution (the 5th percentile of the probabilistic RSAL distribution) adequately represent the Reasonable Maximum Exposed (RME) individual or not?
  - Two-dimensional maximum credible accident (2D MCA) may have been informative, but complex analysis was beyond the scope of what was needed in this case and quantitative assessment of uncertainty is too subjective.
- A more complete discussion of sources of uncertainty in the dose and risk coefficients, but not quantification:
  - Even ICRP has not made a quantitative estimate of uncertainty regarding dose and risk coefficients.
  - EPA's ORIA is currently tasked with making estimates of uncertainty for the FGR 13 risk coefficients.

- Dose Conversion Factors (DCFs) from ICRP 60-72 rather than ICRP 26-30 (issue of no regulatory precedent for use of the dose factors from ICRP 60-72 rather than ICRP 30):
  - ICRP 26-30 methodology will continue to be used for all site compliance calculations as required by U.S. Department of Energy (DOE) orders; however, ICRP 60-72 provided a more precise biokinetic model of the respiratory system, provided more accurate apportionment of dose to the gastrointestinal tract, and reduced uncertainty.
  - ICRP 72 dose factors specifically applicable to members of the public as opposed to the workers.
  - Models used to develop ICRP 60-72 dose factors are the same as those used to develop the Cancer Slope Factors from FGR 13.
- Special dose or risk coefficients pertinent to the RME individual will not be developed.

- Validity of point estimates.

Reed opened up the floor for technical and policy issues. After a short discussion, the Focus Group decided to set the agenda for the next meeting. Meeting topics would include:

- Rerun uranium RSAL calculations and provide results;
- Revised RSAL Task 3 report;
- Revised surface Americium and Plutonium RSAL for Task 3, Table 4; and
- Action level framework.

AGENCY RESPONSES TO WIND TUNNEL STUDIES PEER REVIEWS

There were no additional comments or questions regarding the wind tunnel studies peer reviews.

ADJOURN

The meeting adjourned at 5:05 p.m

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Meeting Minutes
March 20, 2002

Appendix A
Participants List

RFCA Stakeholder Focus Group
Attachment A

Title:	March 20, 2002 Meeting Agenda
Date:	February 18, 2002
Authors:	Reed Hodgin
Phone Number:	(303) 428-5670
Email Address:	cbennett@alphatrac.com

RFCA Stakeholder Focus Group
Attachment B

Title:	February 20, 2002 Meeting Handouts: • RSALs Response to Wind Tunnel Review Comments, and • Shaking the Foundations? The DOE Low-Dose Study Program.
Date:	March 15, 2002
Authors:	Reed Hodgin
Phone Number:	(303) 428-5670
Email Address:	cbennett@alphatrac.com

RFCA Stakeholder Focus Group
Attachment C

Title:	2/20/02 Presentation: "Response to Peer Review Comments Wind Tunnel Analysis"
Date:	March 15, 2002
By:	Bob Nininger
Phone Number:	(303) 966-4663
Email Address:	robert.nininger@rfets.gov

RFCA Stakeholder Focus Group
Attachment D

Title:	RSALs Working Group Meeting Notes for February 28 and March 7, 2002
Date:	March 15, 2002
Authors:	Sandra MacLeod
Phone Number:	(303) 966-3367
Email Address:	sandra.macleod@rf.doe.gov

RFCA Stakeholder Focus Group
Attachment E

Title:	Agency Responses to the RSALs Task 3 Peer Reviews
Date:	March 15, 2002
Authors:	Steve Gunderson
Phone Number:	(303) 692-3367
Email Address:	steve.gunderson@state.co.us

Cancer Slope Factors

- **Comment:** Cancer slope factors are for mixed age populations and should not be used for adult only scenarios
- **Response:** We will rerun calculations for scenarios with only adults (i.e., wildlife refuge workers and office workers) using adult specific cancer slope factors

Addition of Point Estimates

- **Comment:** Point estimates should be provided to provide perspective to probabilistic estimates
- **Response:** Point estimates will be provided for residential and wildlife refuge workers (the open space and office worker scenarios are already point estimates)

Additional Probabilistic Assessments

- **Comment:** Probabilistic assessments should also be done for the open space and office worker scenarios
- **Response:** Development of probabilistic inputs is time and resource intensive. A workgroup decision was made to focus on the scenarios, pathways, and parameters which would most impact the risk and decision making process

Adult Soil Intake Rates

- **Comments:** The adult soil intake rate does not seem reasonable because it is a single value and it is high. The use of point estimates for variables with sparse data, instead of assigning distributions, deliberately interjects bias.
- **Response:** The report will be revised to use a distribution for the adult soil intake rate. A point estimate calculation using the 100 mg/day EPA default value for agricultural workers, will be provided for comparison.

Childhood Soil Intake Rates

- **Comment:** The values chosen for children seem to be reasonable. The reviewer is skeptical how long the max value (1000 mg/day) can actually be sustained by a child. A value that high seems questionable.
- **Comment:** The RSAL calculation does not take into account extreme soil ingestion behavior that has been observed in a small percentage of children.

Childhood Soil Intake Rates

- **Response:** The intent of the RSALs is to provide a level in soil which is protective of continuous, long term exposures.
- The data suggest that day to day variability occurs with children resulting in occasional days of high soil intake, however, the annual or long term average is much lower.
- Anaconda study determined to be most representative of Denver Front Range population.
- Decision to increase max value a workgroup decision based on other suitable studies.
- Hot spot methodology in Sampling and Analysis Plans will address risks from acute or short term exposures.

Spreadsheet Analysis

- **Comment:** Robert Underwood provided a number of suggestions on improving and correcting spreadsheets used in calculating RSALs
- **Response:** Comments were very good and we will revise spreadsheets to address his comments where they pertain

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Backward Calculation Method

- **Comment:** The backward calculation method is inappropriate for deriving RSALs
- **Response:** There are limitations to this method. It should not be used when the variable that is back calculated (i.e., the risk term) is represented by a distribution.
- However, if you set a single target risk level (risk=10^{-6}), and then algebraically reverse the risk equation, you produce a distribution of RSALs that represents the same source of variability as a forward calculation of risk.
- Each percentile of the RSAL distribution (e.g., the "x" percentile) corresponds to the 1-x percentile for the distribution of risk estimates.